DOCUMENT RESUME

ED 298 137 TM 011 954

AUTHOR Cox, Pat L.; Anderson, Beverly L.
TITLE Evaluating a Three-Ring Circus--or, Understanding Complex Change in Complex Circumstances.
PUB DATE Apr 88
NOTE 26p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 5-9, 1988).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Educational Assessment; Educational Change; Elementary Secondary Education; *Evaluation Methods; *School Districts; *State Programs
IDENTIFIERS Nonlinear Models

ABSTRACT

An educational evaluation design based on a non-linear model of change is presented for use in configuring statewide and/or district-wide systems to support schools in which all students learn to think and acquire basic skills and information. Discussed as a concrete example is Connecticut's Common Core of Learning (CCL), which describes what the outcomes for students educated in Connecticut should be in terms of motivation, intellectual curiosity, self-esteem, skills and competencies, and understandings and applications. The CCL represents a departure from common policy practices. Components of the strategy address collaboration and inclusion of all pertinent educators, action based on a shared new vision of the nature of education, reflection upon the whole of the enterprise, evaluation of large-scale and complex improvement efforts, data analysis, and reviews of staffing and costs. The evaluation design has been found to be particularly appropriate after two years of implementation of the improvement effort for determining means to reinvigorate and focus the effort. A comprehensive outline of the method is appended. (TJH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED298137

EVALUATING A THREE-RING CIRCUS -- OR, UNDERSTANDING COMPLEX CHANGE IN COMPLEX CIRCUMSTANCES

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Pat L. Cox
The Regional Laboratory
for Educational Improvement
of the Northeast and Islands

Beverly L. Anderson
Education Commission of the States

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
TERRY SHINKLE
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

It is becoming increasingly apparent to us that most evaluation designs are consciously or unconsciously based on the assumption of a linear model of change. They are also based on a fairly high degree of distrust of the people engaged in the effort being evaluated. We wish to propose an alternative that assumes a nonlinear model of change--the kind we are convinced is appropriate for the complexities of today's education system-wide changes--and assumes a greater level of trust in the participants.

This evaluation approach is for situations where people are configuring state-wide and/or district wide systems to support schools in which <u>all</u> students are learning to think as well as acquiring basic skills and information. We are finding that this means that people are trying to move the whole system forward, not just one aspect.

Taking seriously the notion that all students must learn qualitatively and quantitatively different things, has vast implications not only for the arrangement of classroom and school, but also for the configuration of district, state department of education, higher education, and other sectors. Organizing for student learning and thinking will fundamentally affect not only what these entitites do, but how they do it. If your interest in policy development and implementation concerns only a slice of the system, a small component of student learning, or assumes that fundamental changes are not necessary, you need read no further.

Our discussion of the evaluation approach will be greatly facilitated by using a concrete example. Recent and ongoing activities in Connecticut provide an excellent application. First let us describe the Connecticut situation.

<u>The Common Core of Learning: An Uncommon Policy</u>

Connecticut actors in education are trying to make fundamental improvements and are consciously or unconsciously using elements of a change strategy that potentially can reconfigure the system.

In March 1986, a state-level blue-ribbon committee began to develop a statement describing what the outcomes for students educated in Connecticut schools should be. The product of their efforts--called Connecticut's Common Core of Learning(CCL)--is a departure from the approach taken by many other states in that it is an expression of "maximum expectations" rather than minimum standards (Connecticut State Board of Education, 1987).

TM 011 954

1
Paper presented as part of the symposium entitled: "Measurement of Large-Scale, Complex Reform in Education: Mirroring Reality to Enact the Future" at the American Educational Research Association annual meeting, New Orleans, LA, April 1988.

Moreover, the CCL document constitutes a vision of the whole student: it includes desired outcomes not only in the area of skills and competencies, but also in the category of understandings and applications. Even more significantly, it addresses attitudes and attributes such as motivation, intellectual curiosity, and self-esteem.

The process of development and implementation of the Common Core of Learning has also been a departure from common practice. The committee, of course, represented a variety of perspectives; moreover, the initiation of the CCL in the state department of education and the staff to the committee were both cross-divisional in nature. In addition, the participation of districts and schools was sought from the start, making the process a cross-level one as well. Higher education, the regional educational service centers (RESCs), and the Office of Planning and Management were also involved.

The developers of the CCL document were aware that, unlike minimum standards, use of the CCL could not fruitfully be mandated. Indeed, engaging with the CCL--debating its contents, for example--can become an exercise in vision-building, which is precisely what the developers had in mind.

Therefore, concern about use of the CCL document and implementation of its contents guided the developers' strategy from the start. Recognizing that all educators must grapple at some point with the question of what an educated student looks like and how their efforts contribute to that outcome, initial experimentation with the core was designed to fuel that grappling, to foster processing and even debate of the contents of the core. To continue the dialogue begun during the development of the document, the state department created a consortium of about twenty districts around the state that volunteered to use the CCL in some way. The only requirement for participation was that the district had to be engaged in an activity to which use of the CCL might contribute.

The Consortium districts work in cross-role teams including administrators, teachers and board members. Also participating in the Consortium are teams from the regional service centers, the state department of education, and higher education.

In summary, the CCL is a departure from common policy practice in a number of ways. Among them:

- It targets all students, not a particular special population
- It is aimed at maximum potential of the student, not minimum competency
- It focuses on the whole student, not a single aspect
- It focuses on integrated outcomes in students--what they should exhibit, be able to do, etc.--rather than single inputs or throughputs to education such as course offerings, etc.
- It includes outcomes and integration of outcomes for which there are currently few assessment tools, yet which are critical to assess
- It clearly suggests that multiple organizations and different types of role groups need to participate to successfully implement its contents
- It has implications of potentially vast dimensions for change not only in schools and districts, but also the state department of education, higher education, etc.

- Its development and implementation is based on fostering a range of uses rather than mandating compliance

- It acknowledges the difficulty of the task and is committed to the long haul rather than quick fix

- It is designed to infuse meaning and give focus to educational organization planning and operations rather than be a stand-alone or add-on.

- Its message is subtle but the implications for deep implementation are extremely complex and in fact amount to system reconfiguration to make possible the desired outcomes.

A Strategy for Complex Change in Complex Situations

Based on an extensive review of ideas about change strategies for complex situations, we have outlined the components of an approach particularly appropriate for such circumstances. Such a change strategy seems to be in operation to some extent in Connecticut and has the potential for even greater applications.

We suggest that states consider an approach for moving forward on reshaping their education system that consists of three components, all premised on collaboration and inclusion. First, we must move toward a shared vision of what desired outcomes for all students look like and how an education system that makes possible the outcomes should be configured. Second, we must stimulate productive and meaningful action that starts to make the vision a reality throughout the system. Third, we must have reflection for sensemaking--i.e., ways to reflect on our progress and make sense of what happens as people begin to act to implement the vision and what should happen next to further implementation (Anderson and Cox, 1987).

These are not linear steps, however. It is more like managing a three-ring circus where the emphasis on each ring shifts based on complex orchestration, where the rings sometimes overlap and blend together and above all where the actions of those involved, though guided by a common sense of them, are not fully controlled nor their consequences known in full at the start. Simply put, management of such a strategy requires creative and integrative thinking at all levels.

Let us talk a little bit about the components of the strategy.

Collaboration and Inclusion

The strategy is founded on collaboration and inclusion for very practical reasons. In facing complex, intertwined problems, it is critical to have multiple, diverse perspectives from those affected in order to frame problems and craft workable solutions. Such solutions increasingly are cross-role, cross-task, cross-organizational, and even cross-sector in nature (Cleveland, 1986; Trist, 1983).

The turblence caused by multiple actors acting in multiple, unconnected ways; the bad policies that result from successive, disjointed compromises; the "you may win this one, but I'll get you next time" orientation that one state-level actor called "cowboys and Indians", are all too costly to allow to persist. We simply do not have the time, money, or energy to undo and

do again.

Moreover, we can no longer affort to leave anybody out, if not for humane reasons, then again for simple pragmatism: not only are our fates inevitably and inextricably linked in a technology-based information society, but the smaller numbers in the younger generation means we cannot waste lives as we have in the past.

We must then move beyond maximizing the self-interest of a few to maximizing the self-interests of all. Collaboration and inclusion, then, must be the very essence of the strategy, not just something done at the beginning of some sequence of action as a step called "building ownership" or under the heading of "overcoming resistance." The inclusion must be based on the use of cooperative rather than controlling power. Vision-building and action among and between organizations in a turbulent environment such as we have today must use enabling power to motivate and energize others, because traditional hierarchical power loses potency the farther it travels beyond the boundaries of individual organizations. Even within organizations, controlling power is becoming increasingly ineffective.

Vision-building

The strategy is based on a new vision of what education is all about. As has been so well argued in the Carnegie and other reports, our economic future requires people not only with basic skills but well developed capacity for creativity, problem-solving, high level integration and analytic thinking, and interpersonal skills. Moreover, we must actively support the diversity that characterizes our nation by developing much more flexibility and creativity in instructional and organizational approaches. This vision must be a vision of the whole: it must include not only what we want for the whole child, but for the entire education system. Adults must model the same behaviors we expect the young to develop. We must finally begin to walk our talk.

A shared vision of an equitable and effective education system in which all students are learning more, thinking better, and are actively engaged in working with others needs to be built among many people. Because the existing industrial model of schooling is so familiar to so many people, it is extremely difficult to build new images in people's minds of what the schools and supporting structures should look like. It is analogous to trying to have people understand what an automobile is when they are only familiar with horse-drawn buggies. The vision needs to be widely shared because so many types of people have impact on the system--the public, business leaders, educators, state leaders, students, and so on.

Vision-based Action

The building of a shared vision in and of itself typically begins to motivate people to action that will make that vision a reality. However, other stimulators of action are needed as well. Elsewhere, we have identified "energizers" that can be used to encourage productive and meaningful action (Anderson & Cox, 1987).

Such action needs to be guided, with steady reference to the vision. Vision is often trivialized rather than operationalized. Indeed, in order to act in a time when the very ground seems to be moving, we tend to ignore the larger complexity to concentrate on the task at hand. The more logical, compartmentalized, and tidy the task, the more we are able to act, and the easier it is to forget the overall picture. Nevertheless, in a large-scale, complex improvement effort, there will be schools and districts, and others that are doing more than going through the motions: they will have harnessed action to vison.

Understanding the difference--matching behavior to intent--is where reflection for sensemaking comes in.

Reflection for Sensemaking

Individuals need to step back from the daily routine to consider a) the larger purpose of their actions; b) the connections and fit between their actions and those of others; and c) next steps. What we have called reflection for sensemaking is making time to do that.

While individuals could (and should) engage in this behavior on their own, having multiple perspectives brings both more and different information to bear along with different sets of analytical and synthesizing skills. The result is a better reckoning, a more accurate reading on the situation than would otherwise be the case. Sensemaking operates on multiple parameters, then. It should include among other things: both global and linear thinking; big picture and little picture views; insider and outsider perspectives; past, present, and future orientations; oral and written communications; technical, psychological, sociological, and political insights; vision and task relationships; and multiple stakeholder perceptions.

It has been said that a concept is useful when it differentiates reality. Sense-making is an occasion for bringing collective information and knowledge to bear on the subject at hand, the better to differentiate and therefore get a handle on that reality that swims all around us. It has a centering effect.

Evaluation of a Large-scale, Complex Improvement Effort

Given this orientation, let's now look at how one would conduct an evaluation of the implementation and outcomes of a large-scale, complex change effort based on these components. Evaluation is one type of reflection for sensemaking: to understand the what and how of collaboration, vision-building, vision-based action, and reflecting for sensemaking across a state. It is also an opportunity to further the change strategy by enhancing collaboration, promoting vision-building, and fostering vision-based action through the design and conduct of the evaluation itself.

Through the evaluation, then, we want to heighten the conscious attention to the components of the strategy by both looking for them and using them. A change effort as complex as the CCL in Connecticut is in constant danger of losing momentum in the face of day-to-day pressures, never becoming widely understood, devolving into discrete tasks, or being replaced by more draconian measures before its true impact can be discerned.

It seems to us, therefore, that the implementation evaluation provides a significant opportunity to engage individuals and organizations within a state in a refocusing on what the vision is all about and what is being done to operationalize it. There will be pockets of progress in many different places; these need to be identified, analyzed, and highlighted.

During the first years of implementation, we believe the evaluation effort should be largely qualitative in nature: profiles of use, case studies of systemic change, and tracer studies of diffusion and impact are appropriate vehicles. Considerable effort should be spent on documenting how individuals and organizations know they are on the right track, what their needs are, and what evidence they use to adduce those conclusions.

As this type of evaluation is being developed and conducted, it is essential that measures of student learning are being developed in the areas for which instruments are not currently avalable or being used. CT is an excellent example of a state that is actively engaged in such development. The timing of the avilability of the new student assessment tools are projected to coincide nicely with the time when effects of CCL implementation are being felt in these areas. (Rindone & Baron, 1988)

In the next few pages we comment on and illustrate four aspects of the evaluation design--the driving evaluation questions, the analyses and reporting of the data, staffing and costs. Hopefully thse comments will give the flavor of the approach and make it possible for an evaluator to deduce a specific design for a particular situation that will enlighten people on whether an effective strategy of change is underway.

Evaluation Questions

Table 1 presents a set of guiding evaluation questions that could be used to look at the progress on implementation of the CCL in Connecticut. With little difficulty most of them could be converted into questions for other types of policies and practices designed to lead to fundmental changes in what students learn and consequently in how the system operates.

As part of the development of the evaluation design, we would convene focus groups comprised of individuals from participating organizations to brainstrorm and select questions for the evaluation. Such groups could concentrate on issues specific to individual organizations as well as state-wide issues.

Notice that these questions are designed to give a picture of the extent to which collaborations are being effectively and broadly built. Other questions give a picture of who is sharing the vision for the changes in what students learn. Still others determine if people are consciously and effectively reflecting on what is happening and what they are doing in a way to gives new understanding and meaning to actions.

Analysing the data

The literature on strategies of change for complex situations suggests that there are several indicators that people are grasping the new vision and are acting to make it a reality. (Quinn, 1980) Among the particularly important ones that we think should be kept in mind when synthesizing and analyzing the responses to the evaluation questions are:

> Does it appear from the data that the multiple perspectives are enhancing understanding?
>
> Does there seem to be a core of well regarded and capable people who are continuing to refine the best ideas of changes that are needed in the system?
>
> Are adults in the system enacting the vision for themselves of doing more higher order thinking and acting in ways that model the behaviors desired of students? Do they recognize the significance of modeling?
>
> Do more and more people seem to be developing an awareness of the vision (the CCL) and becoming increasingly committed to it?

Are symbols and ways of talking about the schools being changed to coincide better with the desired vision?

Are new viewpoints, consistent with the vision gaining legitimacy?

Are partial solutions being implemented to serve as building blocks?

Is political support broadening?

Is opposition being co-opted or neutralized?

Do energizers--e.g., harnessing self-interest, compacting tasks, fostering coherence, sense of accomplishment--seem to be working throughout the system to keep the effort moving forward? Does the energy seems sufficient to meet the next round of challenges?

Are collaborations being built in a way that trust, mutual respect, authentic communicaton and goal-accomplishment exists among partners?

Are champions being rewarded?

"Yes" answers to the above questions suggest that the strategy is moving ahead in the desired direction. The analysis will most likely reveal that progress is being made in certain areas but not in others. These analysis questions should reveal where to focus attention to build and maintain momentum toward the vision.

In conducting the analysis, we would suggest that people who are directly involved in the change effort participate in meetings where data summaries are presented. Then they are part of the team to gain meaning through analysis from the data. The very act of analyzing the information is a critical skill that the participants need opportunities to develop. This approach, if done in a meeting with the "right" mix of people and with the right type of facilitation, can be very powerful in helping people decide on next steps. One important aspect of this approach is that people will be less likely to decide on their own next steps in isolation from the rest. Thus collaboration in the analysis--reflection for sensemaking--can be very effective in moving the effort forward.

Staffing

We would suggest a mix of people to conduct the evaluation. Outsiders, skilled in evaluation methods and understanding of the change strategy, can be very helpful in defining the questions, participating in data collection, and in summarizing the data to ensure as little bias as possible. They can also be very helpful in serving as facilitators for the analysis meetings and in crafting the final written report of the evaluation. Note that we would assume that the final report would essentially contain no surprises. The major audiences would have received the report in essence through the various analysis and interpretation meetings in which they participated.

We would suggest that people involved in the change effort--the insiders--participate in the data collection so that as much learning as possible finds its way back into the effort. For example, teachers and administrators from one school may be a part of a team that interviews people from other schools.

Table 1

EXAMPLE EVALUATION QUESTIONS BASED ON THE STRATEGY

Collaboration and Inclusion

To what extent are role-groups and organizations that have not previously worked together forging links?

What structures and mechanisms have the various participating organizations used to implement the CCL?

What has been the membership composition of teams and committees?

What proportion of a participating organization's staff has been involved in activities that have used the CCL?

How have organizations balanced the desire to get everybody in on the action and still get action?

What have been the benefits and costs of collaboration in different types of organizations?

What skills have individuals and organizations had to acquire in order to successfully engage in collaborative activities?

Is empowerment of people at all levels occurring? Who is getting left out?

Vision-building

What is the level of awareness of the CCL and/or similar efforts to articulate outcomes for students as a vision of schooling?

Are individuals and organizations building a vision of schooling or are they just going through the motions?

Is the vision being refined and made more fitting for specific situations? Are more and more people grasping its meaning and importance?

Are parts that have previously been unconnected being integrated into a whole?

Is a common language among actors developing?

Are we expanding awareness of and commitment to the vision

Are we blending effectively the multiple perspectives into a shared vision?

What types of leadership and management are in place to move the vision forward?

Vision-based Action

How have participating organizations operationalized and implemented the CCL? On which aspects have they focused?

What is the level of use of the CCL? Where can participating organizations and their staffs be placed on a continuum ranging from non-awareness to awareness to planning to implementation of different aspects of the CCL?

Are the actions that are being taken aimed at the total organization or a part of it?

Is the energy of people still at a high enough level to keep going?

Is action being taken based on the vision?

Are people throughout the effort learning to think better?

Are organizations planning for long-term, transforming change or are they pursuing short-term objectives? Or a combination of the two?

Are participating organizations acting out of a sense of compliance or have they harnessed the CCL to their own goals?

What roles are central office personnel, building administrators, and teachers playing in this effort?

What change strategies are participating organizations using to operationalized the CCL?

How are participating organizations keeping attention focused on the effort? What incentives have been built in?

Reflection for Sensemaking

Are we experiencing successes? Is what we are doing working? How do we know? How can we tell others?

Are we attending to unanticipated consequences?

What types of structural changes have occurred as a result of attempts to implement the CCL?

What has changed for students as a result of the implementation? How can we tell if they manifest the desired outcomes?

To what extent is the CCL being integrated in efforts going on in organizatic..s vs. being treated as a special project?

What needs to be done in order to promote further implementation?

How have relationship among various actors in the state shifted as result of implementation of the CCL?

What types of assistance do participating organizations need in order to move forward?

Costs

The costs for the effort could be kept low by using people in the system to do much of the work of analysis, synthesis and interpretation. The tasks to be done by outsiders and the coodination and arrangements for meetings, interivews etc. are likely to require special resources but these should be able to be kept to a minimum.

We would suggest that the majority of the resources be put into the development of new measures of what students know and are able to do. Without these tools, we will not be able to tell if the changes are really making a difference at the student level. We do not want change simply for the sake of change.

Summary

In this paper we have described a strategy of change for large scale, complex and fundamental improvements in the education sytem. The strategy consists of:

- collaboration and inclusion;
- moving toward a shared vision;
- productive and meaningful action to make the vision a reality;
- reflection for sensemaking.

The evaluation design we have discussed is seen as particularly appropriate after a couple years of implemtation of the improvement effort to determine how to reinvigorate and focus the effort. The level of detail presented here has hopefully been sufficient for an experienced evaluator to convert the ideas into a complete evaluation design for a particular situation. Good luck!

References

1. Anderson, B.L. and Cox, P.L. (1987). Configuring the education system for a shared future: collaborative vision, action, reflection. Denver, CO: Education Commission of the States.

2. Cleveland, H. (1985). The Knowledge Executive: Leadership in an Information Society. New York: E.P. Dutton.

3. Connecticut State Board of Education, Connecticut's Common Core of Learning, January 1987.

4. Pava, C. (1986). New Strategies of Change: Reclaiming nonsynoptic methods. Human Relations, 39, (7) 615-633.

5. Quinn, J.B. (1980, Summer). managing strategic change. Sloan Management and Review. pp. 3-20.

6. Rindone, D.A. and Baron, J.B. "Capturing the breadth of the student's educational experience: Assessment of the Common Core of Learning." Presented at the American Educational Research Association annual meeting, New Orleans, LA, April, 1988.

7. Trist, E. (1983) Referent organizations and the developmen: of inter-organizational domains. Human Relations, 36, 269-284.

INTRODUCTION

The Common Core has been developed with an understanding that students begin their schooling at different levels of readiness and some have developmental handicaps as well. It is also acknowledged that students have different interests and aspirations. Recognizing these differences, however, does not justify the development of a different Common Core for each student. To the contrary, the goal of each student developing to his or her fullest potential argues for the creation of one Common Core that has the highest expectations for each child.

Connecticut's Common Core of Learning is organized under three major headings with subheadings that reflect significant groups of skills, knowledge and attitudes:

Attributes and Attitudes

Self-Concept
Motivation and Persistence
Responsibility and Self-Reliance
Intellectual Curiosity
Interpersonal Relations
Sense of Community
Moral and Ethical values

Skills and Competencies

Reading
Writing
Speaking, Listening and Viewing
Quantitative Skills
Reasoning and Problem Solving
Learning Skills

Understandings and Applications

The Arts
Careers and Vocations
Cultures and Languages
History and Social Sciences
Literature
Mathematics
Physical Development and Health
Science and Technology

The order of the three major headings does not represent their relative importance. It does represent a logical sequence of assuring effective learning. While schools share the development of attitudes and attributes with the home and other institutions, it is acknowledged that students learn best when they are appropriately motivated and self-confident. Although by-products of effective instruction, these attitudes and attributes are also preconditions for mastering specific skills. Many of the skills and competencies, and the attitudes and attributes, while not taught directly or from a written curriculum, are continually developed during instruction in the traditional curriculum areas presented in the section on understandings and applications.

The Common Core of Learning should not be misconstrued as a set of isolated skills and understandings. To the contrary, it should be viewed as an integrated and interdependent set of learning outcomes. Users of the Common Core of Learning should continually look for cross-disciplinary and multi-disciplinary approaches and for the transfer of skills and knowledge from one domain to another and one subject area to another. Many items listed under a particular subheading could easily have been included under others.

The Common Core is not a curriculum. Each school district's curriculum will be more comprehensive and significantly more specific, including a wide range of learning experiences and instructional strategies. The Common Core is a statement of the student outcomes expected to result from the entire K-12 school experience. It has been developed to influence curriculum by generating discussion and stimulating change in school programs, student objectives, resource allocations and teaching.

Finally, the Common Core of Learning has been developed neither as a state mandate nor as a condition for graduation. It provides a statement of high expectations needed for all Connecticut students to become educated citizens. It is also offered as a catalyst for school improvement. The framers of this document view it as a beginning, one that will change in response to new demands and challenges.

ATTRIBUTES AND ATTITUDES

A positive self-image and self-esteem are crucial to learning. These attributes determine goals, behaviors and responses to others. Furthermore, people depend on and influence one another. Therefore, it is important that students take responsibility for their lives and set appropriate goals for themselves. In doing so, they develop lifelong attitudes.

The family and societal forces other than schools play major roles in fostering student growth, and schools can provide a supportive climate for that growth. While it is inappropriate for schools to accept the sole or even primary responsibility for developing these attributes and attitudes, it is also inappropriate to deny the critical importance of these factors as preconditions to learning, as consequences of the teaching of all disciplines, and as desired outcomes for all students.

POSITIVE SELF-CONCEPT

As part of education in grades K-12, each student should be able to:

- appreciate his/her worth as a unique and capable individual and exhibit self-esteem;
- develop a sense of personal effectiveness and a belief in his/her ability to shape his/her future;
- develop an understanding of his/her strengths and weaknesses and the ability to maximize strengths and rectify or compensate for weaknesses.

MOTIVATION AND PERSISTENCE

As part of education in grades K-12, each student should be able to:

- experience the pride of accomplishment that results from hard work and persistence;
- act through a desire to succeed rather than a fear of failure, while recognizing that failure is a part of everyone's experience;
- strive toward and take the risks necessary for accomplishing tasks and fulfilling personal ambitions.

RESPONSIBILITY AND SELF-RELIANCE

As part of education in grades K-12, each student should be able to:

- assume the primary responsibility for identifying his/her needs and setting reasonable goals;
- initiate actions and assume responsibility for the consequences of those actions;
- demonstrate dependability;
- demonstrate self-control.

INTELLECTUAL CURIOSITY

As part of education in grades K-12, each student should be able to:

- demonstrate a questioning attitude, open-mindedness and curiosity;
- demonstrate independence of thought necessary for leadership and creativity;
- pursue lifelong learning.

INTERPERSONAL RELATIONS

As part of education in grades K-12, each student should be able to:

- develop productive and satisfying relationships with others based upon mutual respect;
- develop a sensitivity to and an understanding of the needs, opinions, concerns and customs of others;
- participate actively in reaching group decisions;
- appreciate the roles and responsibilities of parents, children and families.

SENSE OF COMMUNITY

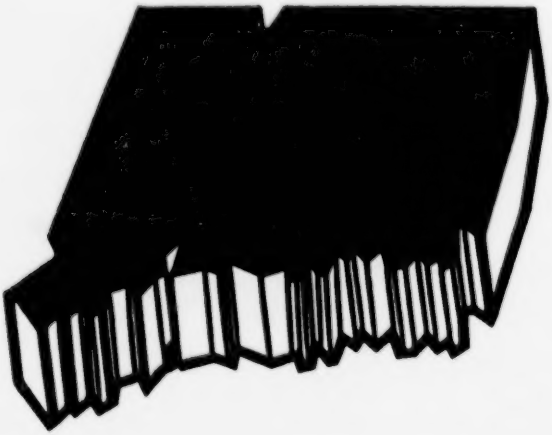
As part of education in grades K-12, each student should be able to:

- develop a sense of belonging to a group larger than friends, family and coworkers;
- develop an understanding of the importance of each individual to the improvement of the quality of life for all in the community;
- examine and assess the values, standards and traditions of the community;
- understand and appreciate his/her own historical and ethnic heritage as well as that of others represented within the larger community.

MORAL AND ETHICAL VALUES

As part of education in grades K-12, each student should be able to:

- recognize the necessity for moral and ethical conduct in a society;
- recognize that values affect choices and conflicts;
- develop personal criteria for making informed moral judgments and ethical decisions.



SKILLS AND COMPETENCIES

All educated citizens must possess a core of basic or enabling skills and competencies that provide the critical intellectual foundations for broader acquisition of knowledge. These enabling skills, applied in diverse ways, form the heart of an academic experience as each contributes to the development of understanding within and among disciplines.

READING

As a result of education in grades K-12, each student should be able to:

- identify and comprehend the main and subordinate ideas, details and facts in written work and summarize the ideas in his/her own words;
- identify, comprehend and infer comparisons, contrasts, sequences and conclusions in written work;
- recognize different purposes and methods of writing, identify a writer's point of view and tone, and interpret a writer's meaning inferentially as well as literally;
- set purposes, ask questions and make predictions prior to and during reading and draw conclusions from reading;
- make critical judgments about written work including separating fact from opinion, recognizing propaganda, stereotypes and statements of bias, recognizing inconsistency and judging the validity of evidence and sufficiency of support;
- vary his/her reading speed and method based on the type of material and the purpose for reading;
- use the features of books and other reference materials, such as table of contents, preface, introduction, titles and subtitles, index, glossary, appendix and bibliography.

WRITING

As a result of education in grades K-12, each student should be able to:

- write standard English sentences with correct sentence structure, verb forms, punctuation, capitalization, possessives, plural forms, word choice and spelling;
- select, organize and relate ideas and develop them in coherent paragraphs;
- organize sentences and paragraphs into a variety of forms and produce writing of an appropriate length using a variety of composition types;
- use varying language, information, style and format appropriate to the purpose and the selected audience;
- conceive ideas and select and use detailed examples, illustrations, evidence and logic to develop the topic;
- gather information from primary and secondary sources; write a report using that information; quote, paraphrase and summarize accurately; and cite sources properly;
- improve his or her own writing by restructuring, correcting errors and rewriting.

SPEAKING, LISTENING AND VIEWING

As a result of education in grades K-12, each student should be able to:

- engage critically and constructively in an oral exchange of ideas;
- ask and answer questions correctly and concisely;
- understand spoken instructions and give spoken instructions to others;
- distinguish relevant from irrelevant information and the intent from the details of an oral message;
- identify and comprehend the main and subordinate ideas in speeches, discussions, audio and video presentations, and report accurately what has been presented;
- comprehend verbal and nonverbal presentations at the literal, inferential and evaluative levels;
- deliver oral presentations using a coherent sequence of thought, clarity of presentation, suitable vocabulary and length, and nonverbal communication appropriate for the purpose and audience.

QUANTITATIVE SKILLS

As a result of education in grades K-12, each student should be able to:

- add, subtract, multiply and divide using whole numbers, decimals, fractions and integers;
- make and use measurements in both traditional and metric units to measure lengths, areas, volumes, weights, temperatures and times;
- use ratios, proportions and percents, powers and roots;
- understand spatial relationships and the basic concepts of geometry;
- make estimates and approximations, and judge the reasonableness of results;
- understand the basic concepts of probability and statistics;
- organize data into tables, charts and graphs, and read and interpret data presented in these forms;
- formulate and solve problems in mathematical terms.

REASONING AND PROBLEM SOLVING

As a result of education in grades K-12, each student should be able to:

- recognize and use inductive and deductive reasoning, recognize fallacies and examine arguments from various points of view;
- draw reasonable conclusions from information found in various sources, and defend his/her conclusions rationally;
- formulate and test predictions and hypotheses based on appropriate data;
- comprehend, develop and use concepts and generalizations;
- identify cause and effect relationships;
- identify and formulate problems;
- gather, analyze, synthesize and evaluate information pertinent to the problem;
- develop alternative solutions to problems, weigh relative risks and benefits, make logical decisions and verify results;
- use critical and creative thinking skills to respond to unanticipated situations and recurring problems.

LEARNING SKILLS

As a result of education in grades K-12, each student should be able to:

- set learning goals and priorities consistent with stated objectives and progress made, and allocate the time necessary to achieve them;
- determine what is needed to accomplish a task and establish habits conducive to learning independently or with others;
- follow a schedule that accounts for both short and long term project accomplishment;
- locate and use a variety of sources of information including print and nonprint materials, computers and other technologies, interviews and direct observations;
- read or listen to specific information and take effective and efficient notes.

UNDERSTANDINGS AND APPLICATIONS

Skills and competencies cannot be ends in themselves. Unless students have the knowledge and experiences needed to apply those learnings and develop a fuller understanding of life, their education will be incomplete. Schools must therefore accept responsibility for leading students through a body of knowledge and its application. This is what comprises the major content of the curriculum.

These understandings and applications have been grouped here under the usual disciplines, but it is important to recognize the inter-relationship among the disciplines and to promote students' ability to transfer knowledge and applications across subject areas.

THE ARTS: CREATIVE AND PERFORMING

As a result of education in grades K-12, each student should be able to:

- express his/her own concepts, ideas and emotions through one or more of the arts (art, music, drama and dance);
- appreciate the importance of the arts in expressing and illuminating human experiences;
- understand that personal beliefs and societal values influence art forms and styles;
- identify the materials, processes and tools used in the production, exhibition and public performance of works of art, music, drama and dance;
- use and understand language appropriate to each art form when discussing, critiquing and interpreting works in the visual and performing arts;
- identify significant works and recognize the aesthetic qualities of art, music, drama and dance from different historical periods and cultures.

CAREERS AND VOCATIONS

As a result of education in grades K-12, each student should be able to:

- demonstrate positive attitudes toward work, including acceptance of the necessity of making a living and an appreciation of the social value and dignity of work;
- demonstrate attitudes and habits (such as pride in good workmanship, dependability and regular attendance) and the employability skills and specialized knowledge that will make the individual a productive participant in economic life and a contributor to society;
- consider the range of occupations that will be personally satisfying and suitable to his/her skills, interests and aptitudes;
- identify, continue or pursue the education and training necessary for his/her chosen career/vocation;
- understand personal economics and its relationship to skills required for employment, promotion and financial independence;
- exhibit the interpersonal skills necessary for success in the workplace (such as working harmoniously as part of a team, and giving and taking direction).

CULTURES AND LANGUAGES

As a result of education in grades K-12, each student should be able to:

- recognize characteristics common to all people, such as physical attributes, emotional responses, attitudes, abilities and aspirations;
- respect differences among people and recognize the pluralistic nature of United States society;
- demonstrate an understanding of other cultures and their roles in international affairs;
- analyze the structure of spoken and written language;
- recognize the commonalities and the differences that exist in the structure of languages;
- understand and communicate in at least one language in addition to English.

HISTORY AND SOCIAL SCIENCES

As a result of education in grades K-12, each student should be able to:

- recognize and analyze events, personalities, trends and beliefs that have shaped the history and culture of Connecticut, the United States and the world;
- demonstrate a knowledge of United States history and government and understand the duties, responsibilities and rights of United States citizenship;
- understand the basic concepts of economics;
- analyze and compare the political and economic beliefs and systems of the United States with those of other nations;
- apply major concepts drawn from the disciplines of history and the social sciences--anthropology, economics, geography, law and government, philosophy, political science, psychology and sociology--to hypothetical and real situations;
- demonstrate basic knowledge of world geography;
- apply critical thinking skills and knowledge from history and the social sciences to the decision-making process and the analysis of controversial issues in order to understand the present and anticipate the future;
- understand the roles played by various racial, ethnic and religious groups in developing the nation's pluralistic society;
- appreciate the mutual dependence of all people in the world and understand that our lives are part of a global community joined by economic, social, cultural and civic concerns.

LITERATURE

As a result of education in grades K-12, each student should be able to:

- understand that literature reflects and illuminates human experiences, motives, conflicts and values;
- understand the essential elements of poetry, drama, fiction and nonfiction;
- understand and appreciate selected literary masterpieces, both past and present, that manifest different value systems and philosophies;
- recognize symbolism, allegory and myth;
- identify literary themes and their implications;
- evaluate selected literary works and support each evaluation;
- enjoy reading as a lifelong pursuit.

MATHEMATICS

As a result of education in grades K-12, each student should be able to:

- understand that mathematics is a means of expressing quantifiable ideas;
- apply mathematical knowledge and skills to solve a broad array of quantitative, spatial and analytical problems;
- use mathematical skills and techniques to complete consumer and job-related tasks;
- select and use appropriate approaches and tools for solving problems, including mental computation, trial and error, paper and pencil, calculator and computer;
- use mathematical operations in describing and analyzing physical and social phenomena;
- demonstrate a quantitative sense by using numbers for counting, measuring, comparing, ordering, scaling, locating and coding;
- apply basic algebraic and geometric concepts to representing, analyzing and solving problems;
- use basic statistical concepts to draw conclusions from data.

PHYSICAL DEVELOPMENT AND HEALTH

As a result of education in grades K-12, each student should be able to:

- understand human growth and development, the functions of the body, human sexuality and the lifelong value of physical fitness;
- plan and implement a physical fitness program with a variety of conditioning exercises and/or leisure activities;
- understand the basic scientific principles which apply to human movement and physical activities;
- understand the role physical activities play in psychological and social development;
- understand and apply the basic elements of proper nutrition, avoidance of substance abuse, prevention and treatment of illness, and management of emotional stress;
- recognize the need for a safe and healthy environment, practice proper safety skills, and demonstrate a variety of basic life saving skills.

SCIENCE AND TECHNOLOGY

As a result of education in grades K-12, each student should be able to:

- understand and apply the basic principles, concepts and language of biology, chemistry, physics, earth and space science;
- understand the implications of limited natural resources, the study of ecology and the need for conservation;
- identify and design techniques for recognizing and solving problems in science, including the development of hypotheses and the design of experiments to test them--the gathering of data, presenting them in appropriate formats, and drawing inferences based upon the results;
- use observation and analysis of similarities and differences in the study of natural phenomena;
- demonstrate the ability to work with laboratory measuring, manipulating and sensing devices;
- understand the implications of existing and emerging technologies on our society and our quality of life, including personal, academic and work environments;
- recognize the potential and the limitations of science and technology in solving societal problems.